

FOREST FIRES IN ITALY

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ATHENS, OCTOBER 2021

2018



«2017: a difficult season for forest fires
in Italy, Spain, France, Portugal,...»

2021



EU countries, forest fires 2021:
502.074 ha

Italy, 2021: 140,000 ha
worst year for forest fires in Italy since 2008

Source: EFFIS

EFFIS, European Forest Fire Information System

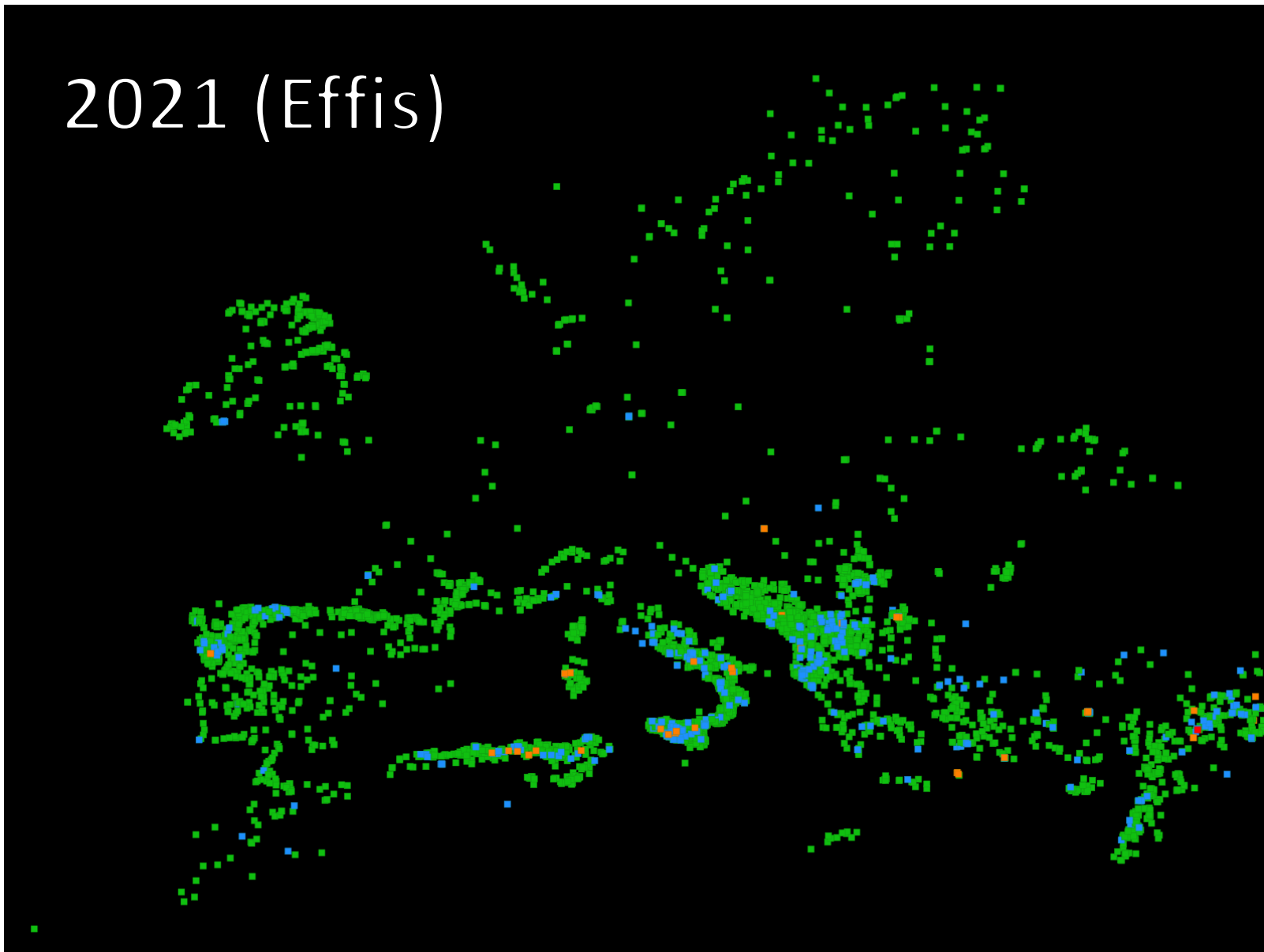
<https://effis.jrc.ec.europa.eu/>

Since 1998

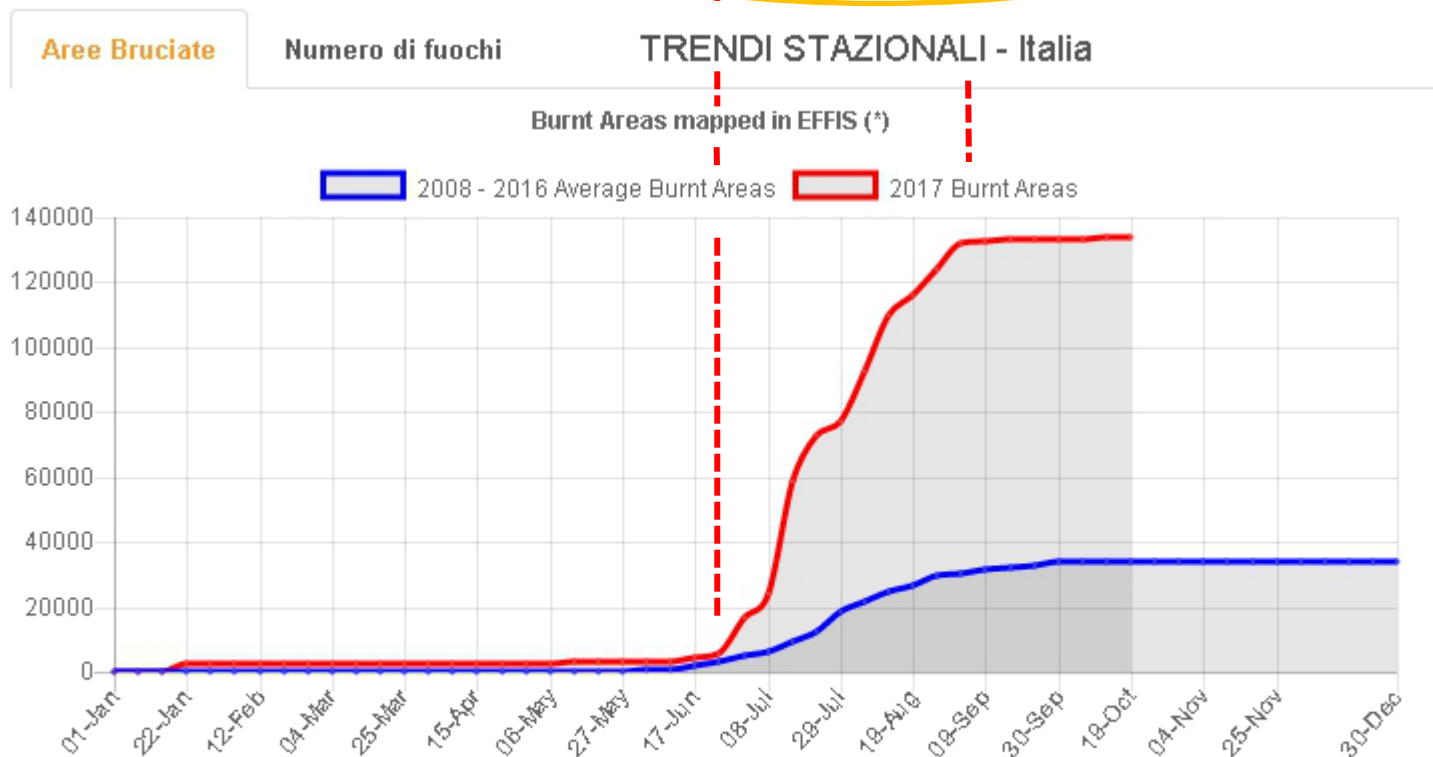
40 countries

All EU countries and Albania, Algeria, FYR of Macedonia, Kosovo, Lebanon, Montenegro, Morocco, Norway, Russia, Serbia, Switzerland, Tunisia, Turkey and United Kingdom

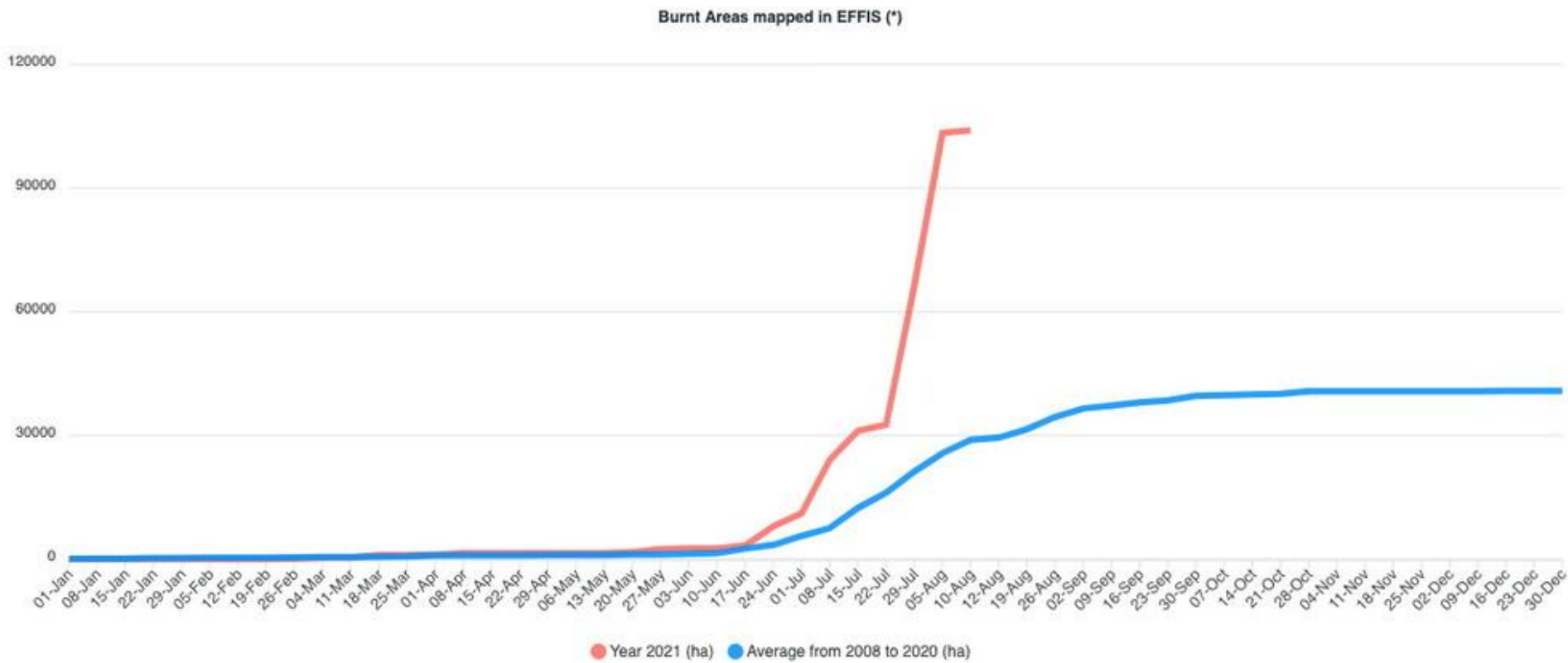
2021 (Effis)



Mid June – Mid September 2017



(*) Le aree bruciate mappate in EFFIS rappresentano, in media, circa l'80% dell'area totale bruciata da incendi, dato che vengono mappati solo incendi maggiori di 30 ha. L'area bruciata da incendi inferiori a 30 ha rappresenta circa il 20% della superficie totale bruciata in ciascun paese, ma questa zona non è mappata in EFFIS.



Italy 2021

Sep 30, 2021: forest fire season officially closed

June 15-Sep 30, 2021:

79,796 forest fires

2020: **54,954**

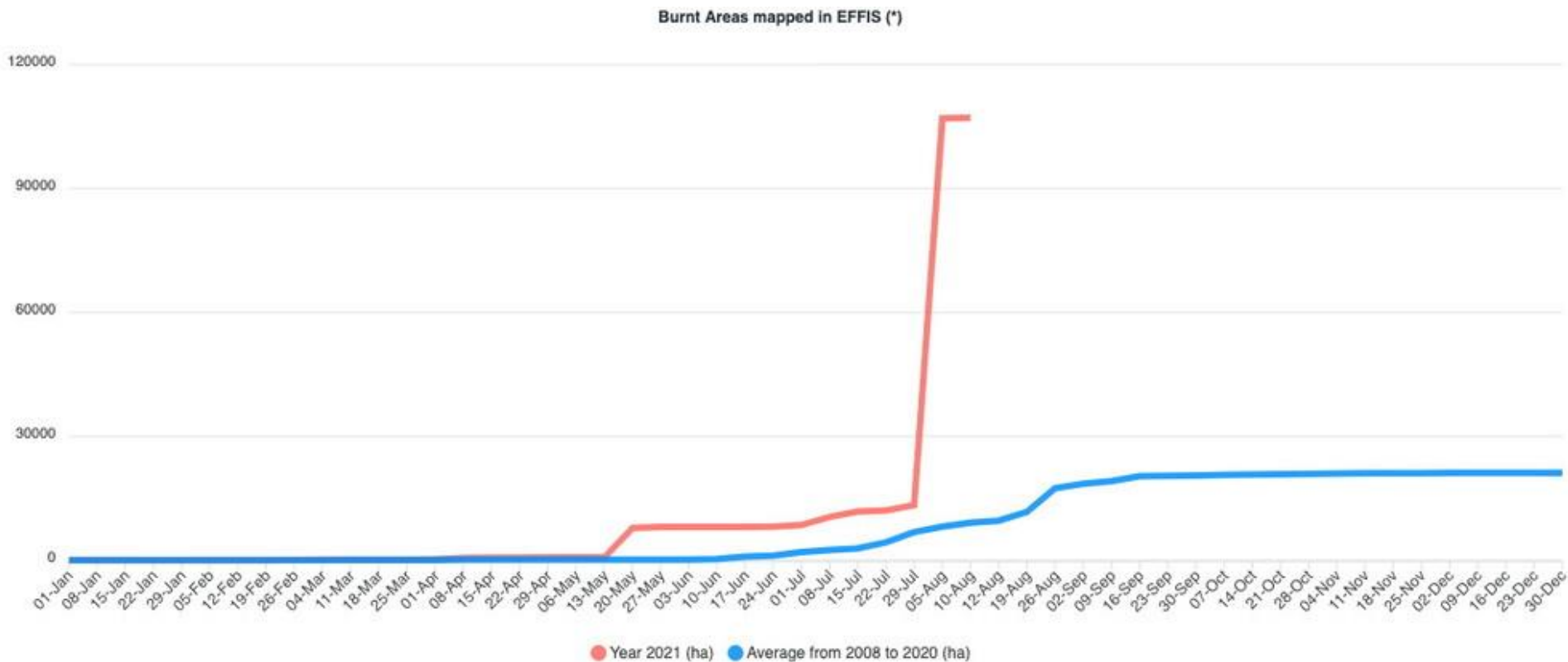
2017: **76,335**

Sicily: 16,770

Puglia: 14,045

Calabria: 9,257

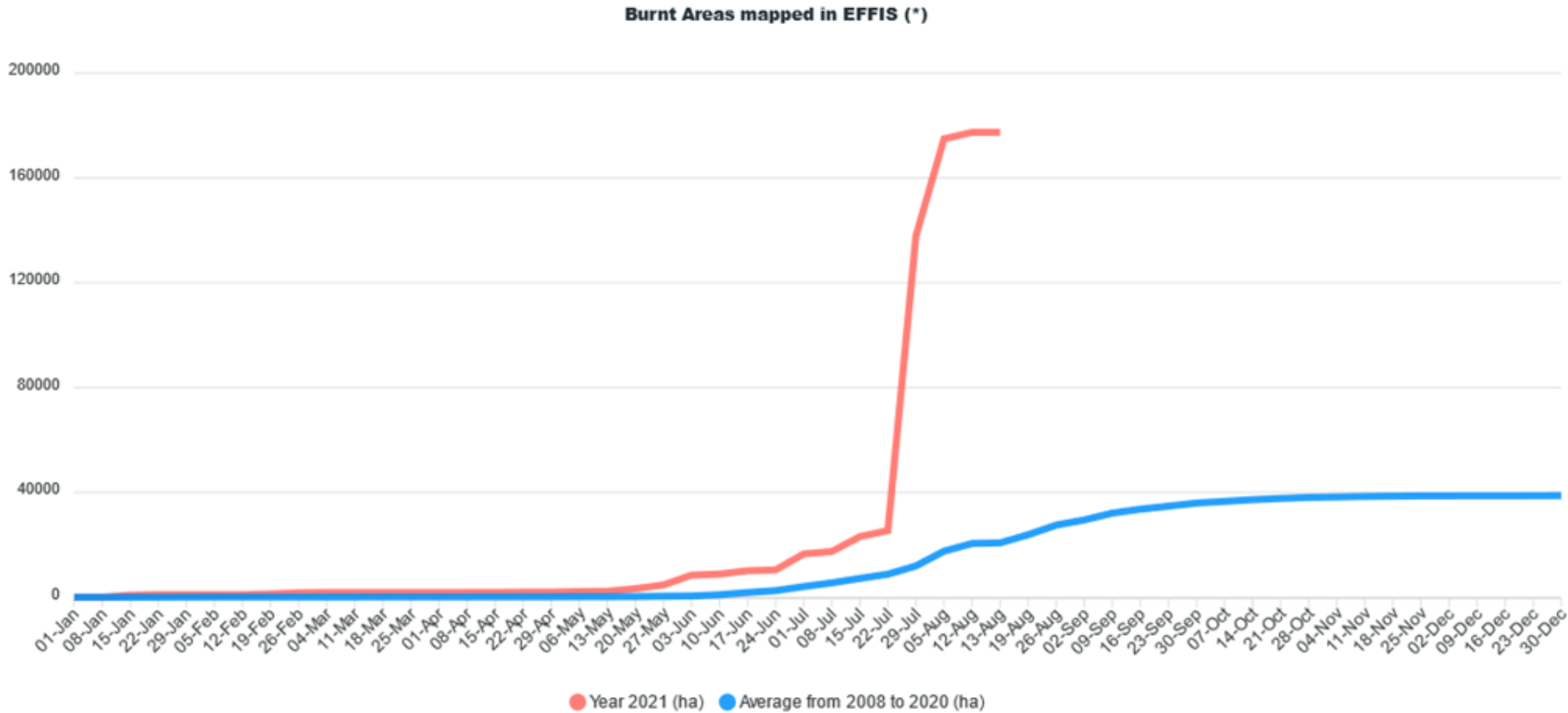




Greece 2021



Εύβοια (Eubea) Greece August 2021



Turkey 2021

Extreme weather in July and August 2021

A selection



Causes of forests fires in Italy

Forest fires - causes

Ripartizione percentuale del numero di incendi per causa

ANNO	Natural	Accidents	Not intentional	Arson	Not clear
1998	1	0,6	12,6	50,7	35,1
1999	0,6	0,2	11,1	48,9	39,2
2000	0,9	0,5	11,8	57,7	29,1
2001	1,1	0,5	34,4	60,0	4,0



Source: Civil Protection Agency, National Forest Corp, 2002




NOT INTENTIONAL FIRES	% of not intentional fires
Sigarettes along roads	12.8
Sigarettes, other	9.7
Clearing of uncultivated	11.7
Clearing of pastures	19.4
Clearing of cultivated land	18.6
Other clearing	11.1
Recreation activities	5.8
Fireworks	0.2
Rubbish fire in abusive dump	3.0
Other	7.4

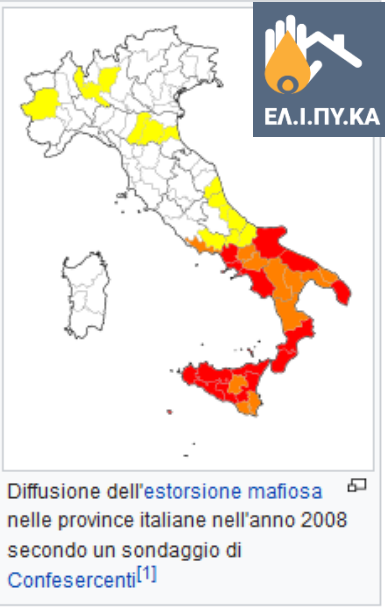
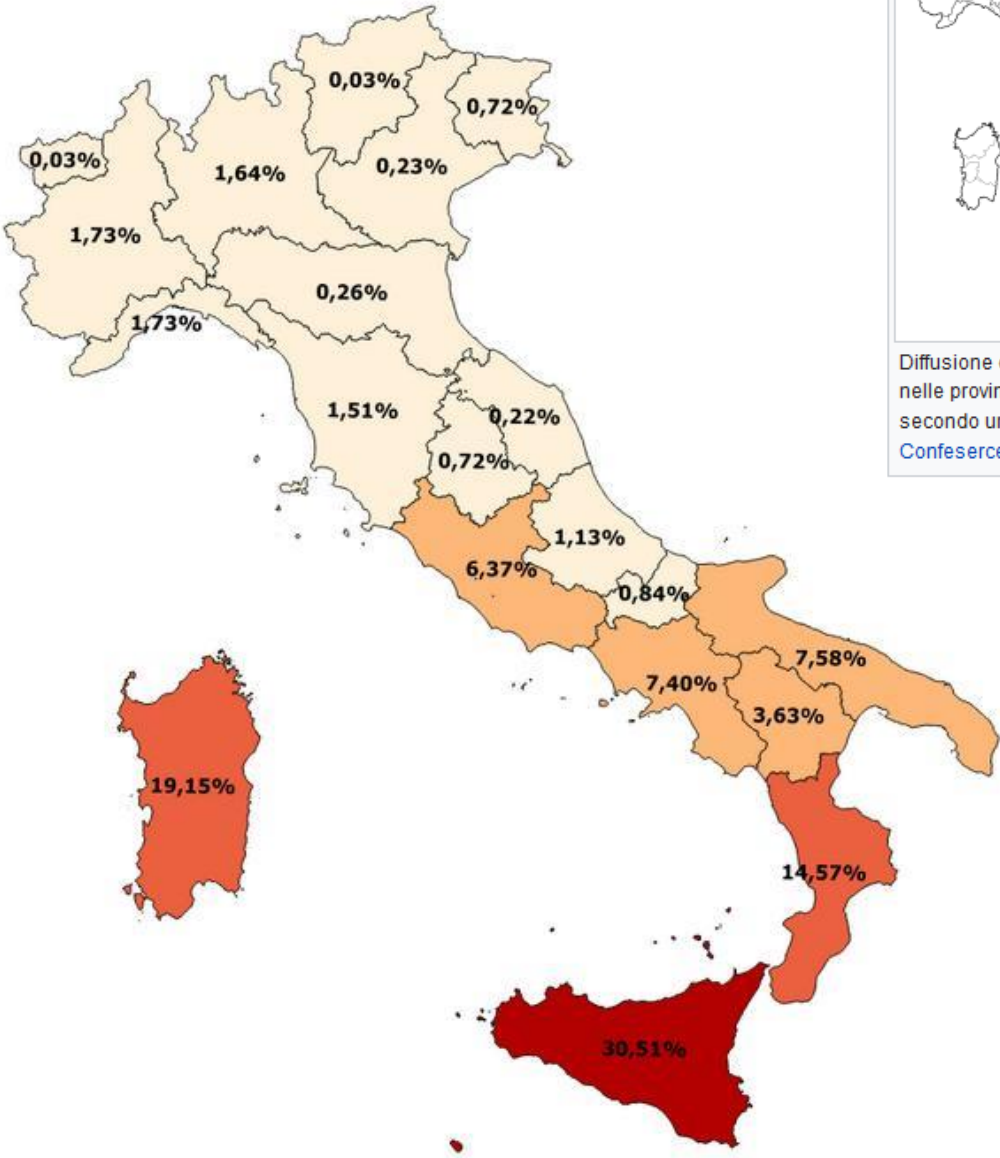
% of not intentional fires on total: 34.4%

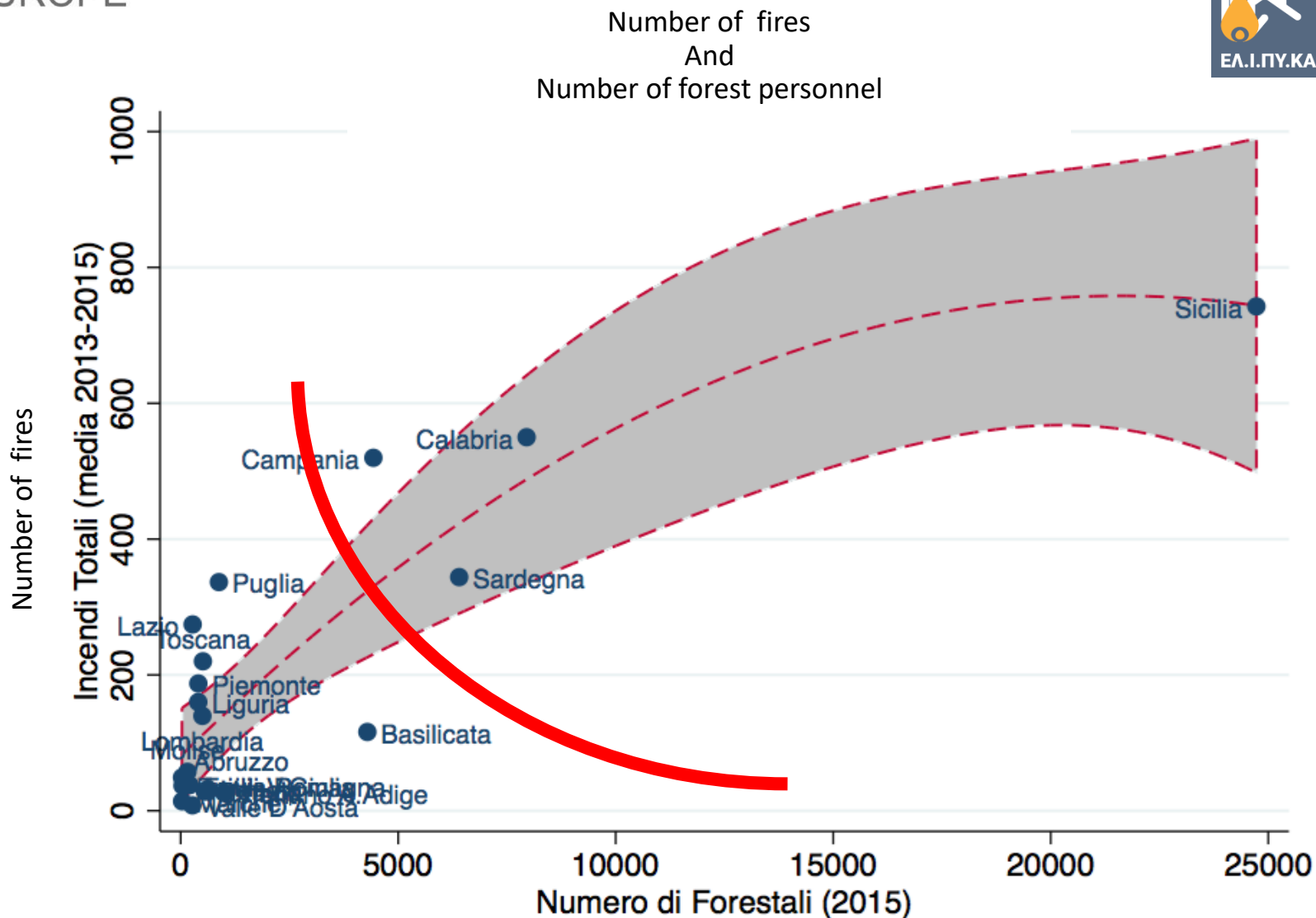
ARSON	% of arson
Clearing of pastures	24.6
Clearing of forest to increase cultivated areas	12.3
For building purposes	2.5
Other economic advantages	11.3
For employment reasons connected with local authorities	4.2
To be hired on fire fighting team	3.7
Criminal organizations	1.0
Revenge among different properties	7.5
Against protected areas	3.5
Social protests, mental illness	10.4
Not determined	4.7
Other	14.3

% of arson on total: 60.0%



Hectares on fire
2009-May 2016



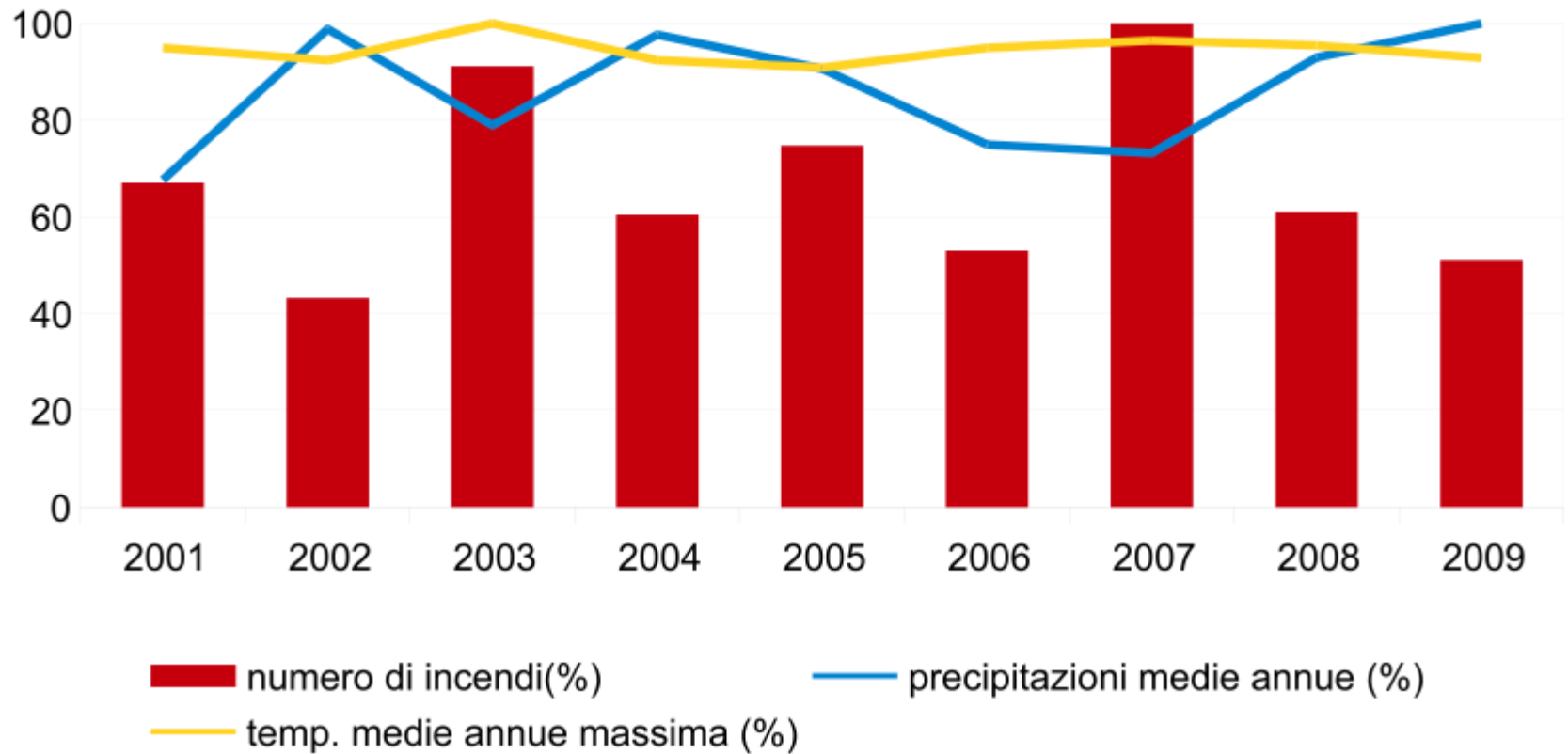


N.B.: Canada has forests for about 400.000 sqkm and 4.200 rangers (1/95 sqkm).
 Calabria : 6500 sqkm and 9.500 forest personnel (1/0,68 sqkm).
 Calabria spends 2,5 times more than Canada for forests.



Forest Fires – a forecast is possible?

Incendi, precipitazioni e temperature medie annue massime

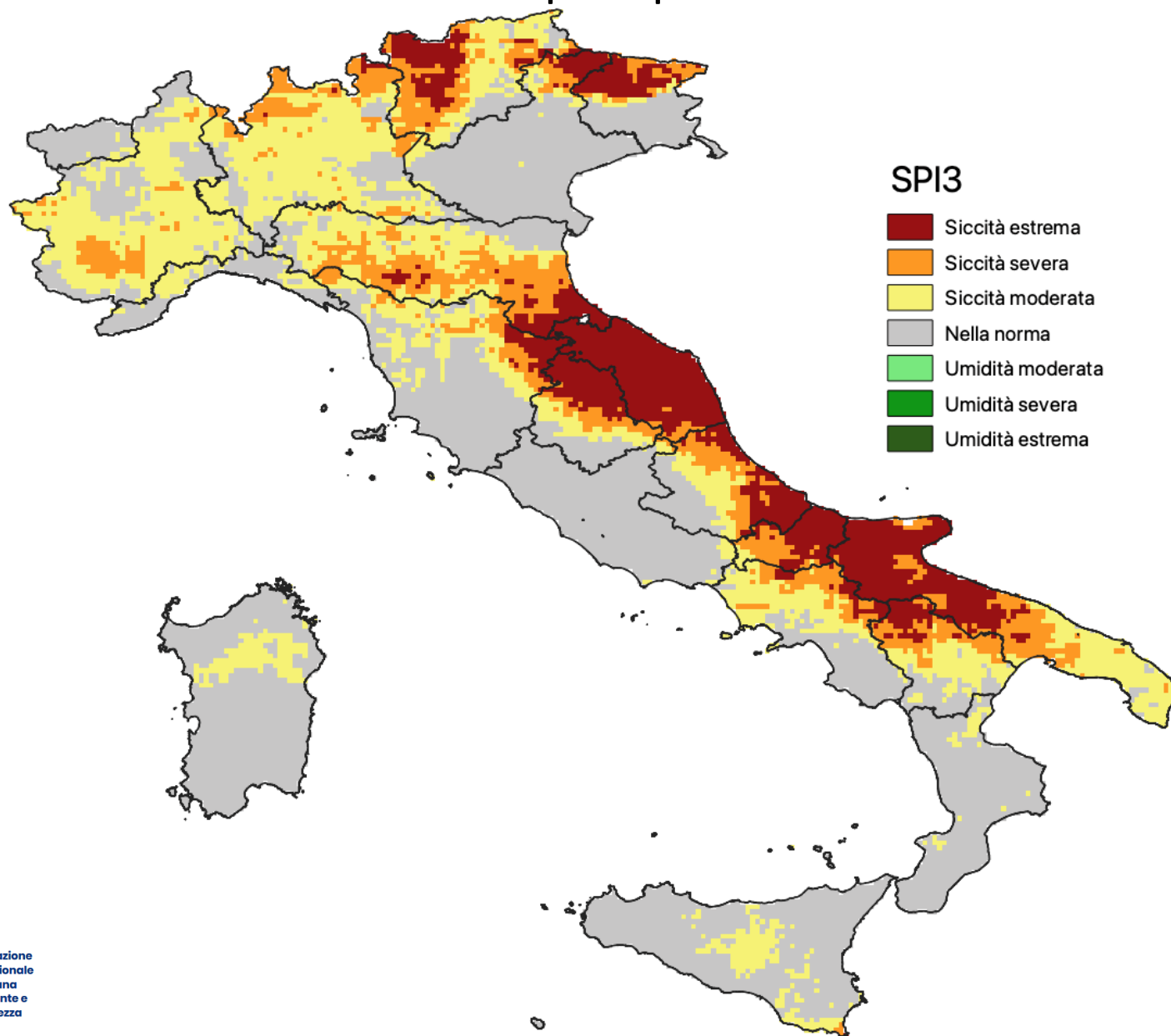


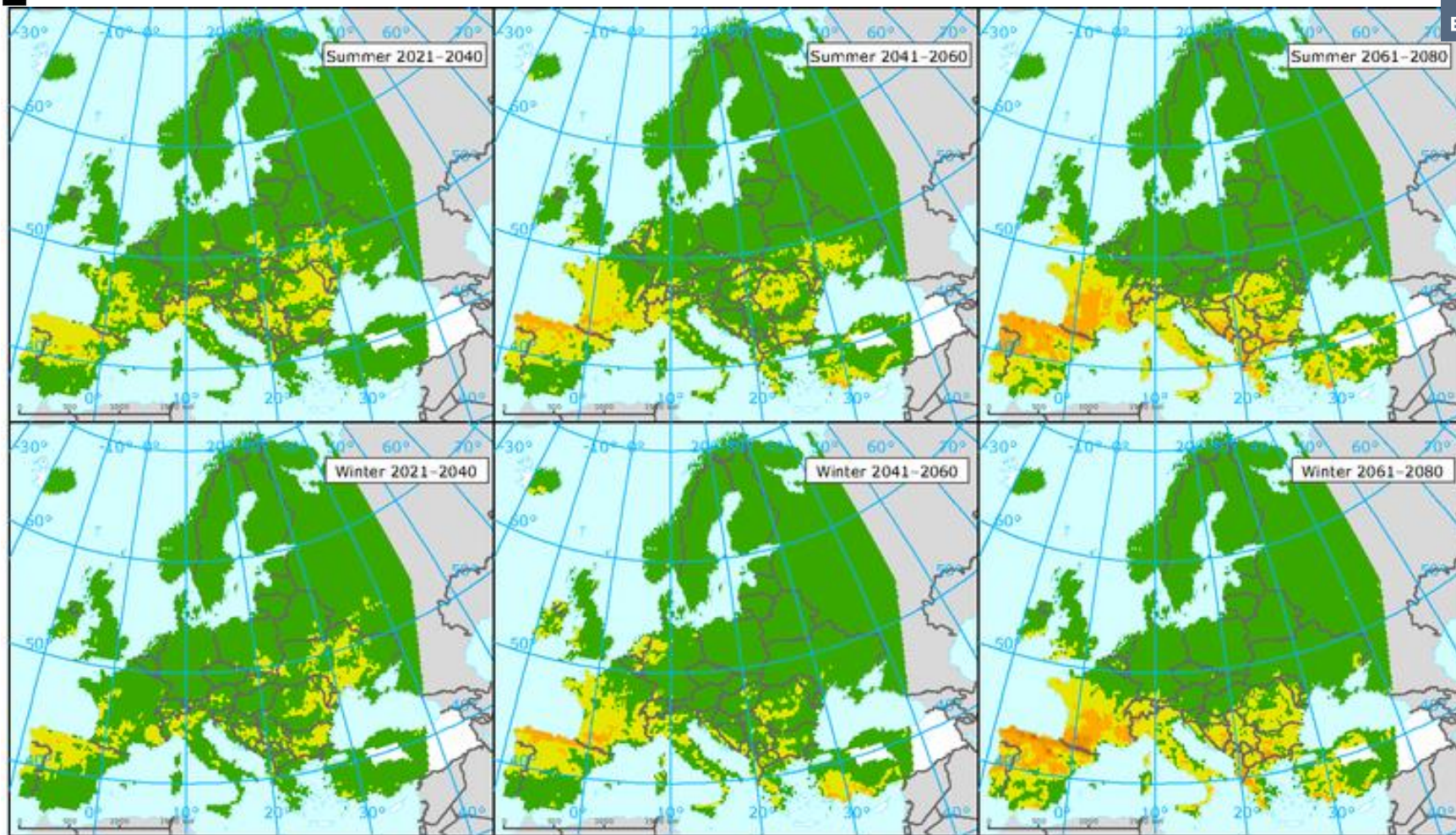
Number of fires
Average max temperatures

Average rain

SPI3 (Aprile - Giugno 2021)

SPI – Standard precipitation index

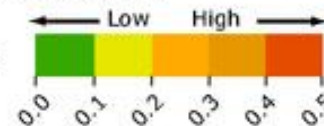




Precipitation deficit in summer (JJA) and winter (DJF) for the periods 2021–2040, 2041–2060 and 2061–2080. Deficits are presented as probability for extreme dry situation using SPI-12 (according to the definition of SPI extreme dry is SPI below – 1.5 means having 1.5 standard deviation less precipitation as in the baseline period)

□ No data □ Outside data coverage

Probability for dry events



Forest fires: prevention

H2020 PREVAIL

<https://www.prevailforestfires.eu/objectives/>

University of Tuscia (It)

University of Naples Federico II (It)

Forest Science and Technology Centre of Catalunya (Es)

Hellenic Agricultural Organization (Gr)

University of Lisbon (Pt)

PREVAIL is funded by the Union Civil Protection Mechanism Programme of
the European Union



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H2020 PREVAIL Objectives

1. To review past and current prevention and provide an economic evaluation of current wildfire management efficacy
2. To identify the contribution of landscape patterns on large fires
3. To assess best strategies to integrate prevention, by sharing and spreading “smart” solutions and transnational training
4. To develop a tool (Decision Support System) to plan and optimize smart solutions
5. To raise awareness of citizens, land managers and fire operators

Italian Tree Walker Network Project

Studies in real time the physiological response of plants
inside the Vesuvio national Park

FORMA Project

Air laser scanner detection of forests in Puglia

Objective: prevention, programme of all rural activities
(forests, agriculture, herding)

European Forest Fire Information System EFFIS

<http://effis.jrc.ec.europa.eu/>

<https://www.copernicus.eu/en/european-forest-fire-information-system>

Forest fires:

Italian organization

Constitution of the Republic of Italy

Art. 117

The State has **exclusive** legislation about:

(...)

s) the protection of environment, of ecosystem, of cultural heritage



Special Status Regions

Legge 21 novembre 2000 n. 353

Legge-quadro in materia di incendi boschivi

Law 353, November 21, 2000
General law about forest fires

Regions have to prepare a
program for forest fire
prevention and protection

in cooperation with the
National Civil Protection Agency
(Protezione Civile)

The regional program includes:

Causes

List of regional protected areas

Areas already affected by fire

Possible risk areas

Periods of fires

Risk assessment

Actions for fire prevention

Position of personnel and resources (land, air)

Access roads

Early alarm system

Information and formation

Financial budget

COAU (Centro operativo aereo unificato, Unified air operation center)

SOUP (Sale operative unificate permanenti – permanent unified operation centers)

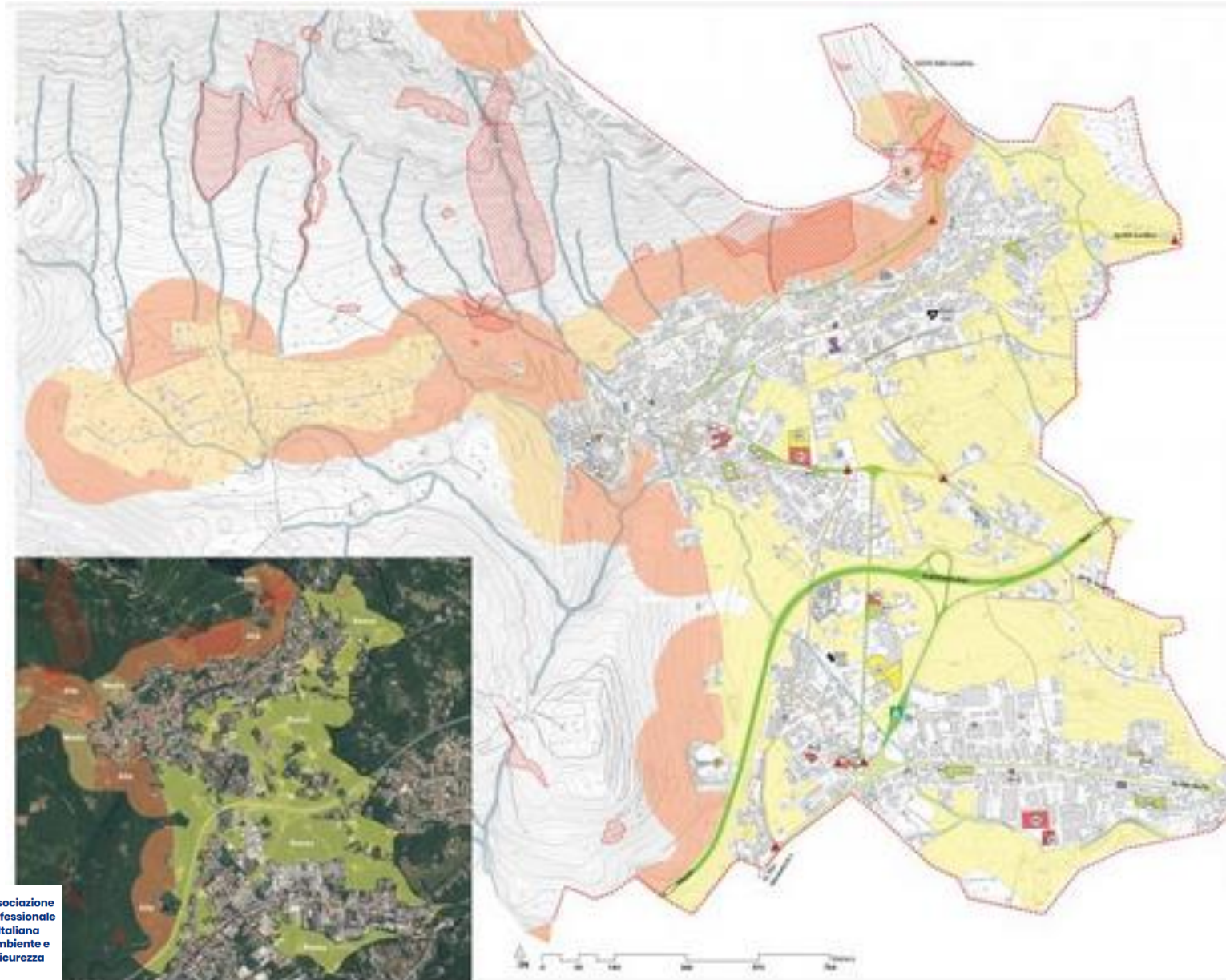


Tavola 2 Partecipazione dei Vigili del Fuoco alle strutture di coordinamento regionali delle SOUP



SOUP (Sale operative unificate permanenti – permanent unified operation centers)

National air fleet



n. 19 Canadair CL-415 SuperScooper



n. 65 various types (AW109, AB412, AW139, AB206)



n. 6 Sikorsky S-64 Skycrane

In case of need: RescEU

EU Civil Protection Mechanism

https://ec.europa.eu/echo/what/civil-protection/resceu_en



The screenshot shows the official website for RescEU, the European Civil Protection and Humanitarian Aid Operations. The header includes the European Commission logo and the title "EUROPEAN CIVIL PROTECTION AND HUMANITARIAN AID OPERATIONS". Below the header, there is a navigation bar with links to "HOME", "WHO WE ARE", "WHAT WE DO", "WHERE WE WORK", "PARTNERSHIPS", "FUNDING & EVALUATIONS", "RESOURCES & CAMPAIGNS", and "NEWS & STORIES". The main content area features a large image of RescEU personnel in front of a yellow and red aircraft. To the right of the image is a "Factsheet" button and a "Share" button. Below the image, the text "© EU 2019" is visible. The right sidebar contains a search bar, social media links, and sections for "FACTS & FIGURES", "RELATED PAGES", and "MORE INFORMATION".

rescEU

Factsheet > Share

© EU 2019

What is it?

In 2019, the EU reinforced and strengthened components of its disaster risk management by upgrading the **EU Civil Protection Mechanism**. The latest element introduced - rescEU - has the objective of enhancing both the protection of citizens from disasters and the management of emerging risks. In addition, rescEU establishes a new European reserve of resources (the 'rescEU reserve') which includes a fleet of firefighting planes and helicopters, medical evacuation planes, as well as a stockpile of medical equipment and field hospitals that can respond to health emergencies, and chemical, biological, radiological, and nuclear incidents.

Why is this important?

The European Union plays a key role in coordinating the response to disasters in Europe and beyond. Disasters have affected every region of Europe in recent years, causing hundreds of casualties and billions in damage to infrastructure and the environment. Epidemics, flash floods, storms, forest fires, earthquakes, and man-made disasters are continuously putting countries' response capabilities under pressure. Additionally, security concerns have become more complex and climate change is expected to worsen the impact of disasters in the future.

FACTS & FIGURES

rescEU is an extra layer of citizen protection in Europe
It is integrated into the EU Civil Protection Mechanism
rescEU strengthens European preparedness for disasters
It boosts capacities to respond to forest fires, medical emergencies or chemical, biological, radiological, and nuclear incidents
To strengthen the EU response to the coronavirus, medical stockpiles in 9 EU Member States allow for a quicker reaction to health crises

RELATED PAGES

- Emergency Response Coordination Centre (ERCC)
- EU Civil Protection Mechanism
- Forest fires
- Union Civil Protection Knowledge Network

MORE INFORMATION

- Legal framework

Land 4x4 vehicles



Drones DJI Matrice 300 RTK



Forest fires repression

Law 353/2000:

Introduction of a new article in the Criminal Code

Art. 423-bis: forest fire

Arson: prison from 4 to 10 years

Not intentional: prison from 1 to 5 years

Increased punishment in case of protected areas



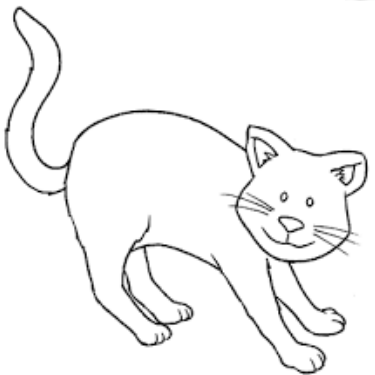
Montesarchio (Bn), August 2021
Farmer, 50

<https://www.ansa.it/sito/notizie/cronaca/2021/08/10/incendi-piromane-arrestato-nel-beneventano-121efcb0-37a1-4bcd-8aee-325424f440db.html>



Gargano (Fg), August 2021





Conclusions:

In the last years in Italy, increasing results in

Prevention: **Study and Analysis (prevention)**

Organization:

Efficiency, organization and use of existing resources

Early detection

Fire fighting

Repression: **Crime punishment**

Thank'you!

Guido Zaccarelli

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Athens, October 2021